

Work Order ID 159676

Monday, April 17, 2017 1:27:38 PM

159676~~U/R~~

Page 1

Item ID: D4842-3
Revision ID: URF 16-692

Accept

N900040100Setup Start ***NS1***
Stop ***NS2***

Item Name: Lower Cutter Body, LH

Start Date: 4/19/2017 Start Qty: 6.00

Required Date: 4/28/2017 Req'd Qty: 6.00

Reference: SCHEDULED/U

6***6***

Cust Item ID:

Customer:

Approvals: Process Plan:

QC:

Date:

Date:

Tooling:

SPC (Y/N):

Date:

Date:

Run Start ***NR1***
Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D4842

~~BU/R~~ PER CONCESSION 400000061786

100

100

Bandsaw

Jeaspa Bandsaw

BAND SAW

Memo

Cut Blank at 7.250"

0.00

0.54

6

Ø

DAS
20
9-89

17-04-18

110

110

HAAS 1

HAAS CNC vertical machine #1

HAAS CNC VERTICAL MACHINING #1

Memo

1-Machine per folio FB192

DWG REV: BFOLIO REV: 11

0.00

3.70

6

Ø

DAS
20
9-89

17-04-20

2- deburr and break all sharp edges

x PER CONCESSION 400000061786

10.8mm +0.00mm

-0.20mm

0.425" +0.000"

-0.0078"

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

Work Order update only ☐

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐ Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐				FAULT CATEGORY Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐					
OTHER : _____									

Work Order ID 159676

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Page 2

Item ID: D4842-3 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: URF 16-692 Stop ***NS2***
Item Name: Lower Cutter Body, LH
Start Date: 4/19/2017 Start Qty: 6.00 ***6*** Cust Item ID:
Required Date: 4/28/2017 Req'd Qty: 6.00 ***6*** Customer:
Reference: SCHEDULED/U
CONCESSION 4000 000 61786

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC2- Inspect parts off machine FAI/FAIB Memo	0.00 0.00				<u>6</u>	<u>0</u>		DAS 20 9-89 17.04.20
130 *130* QC Quality Control	QC8- Inspect parts - second check Memo	0.00 0.00				<u>6</u>	<u>0</u>		DAS 14 9-89 17.04.20
140 *140* Outsource4 Outsource process - Anodize	Outsource process-Anodize per QSI017 4.1.10.1 Memo Issue P/O to ATG : <u>36166</u> 1- Black Anodize as per Dwg D4842 2- PRIME AS PER DWG, SEE NOTE #2 Certification of Comformity is required	0.00 0.00				<u>6</u>	<u>MAY 02 2017</u>		DAS 13 9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabelled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____					

Work Order ID 159676

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159676

Page 3

Item ID: D4842-3 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: URF 16-692 Stop ***NS2***
Item Name: Lower Cutter Body, LH
Start Date: 4/19/2017 Start Qty: 6.00 ***6*** Cust Item ID:
Required Date: 4/28/2017 Req'd Qty: 6.00 ***6*** Customer:
Reference: SCHEDULED/U Concession 400000061786

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Receive & Inspect for Damage & Mat'l Certs	0.00							
150									
Packaging	Memo	0.00							
Packaging									
155	QC5- Inspect part completeness to step on W/O	0.00							
155									
QC	Memo	0.00							
Quality Control									
180	Identify as per dwg & Stock Location: <u>CCK124</u>	0.00							
180									
Packaging	Memo	0.00							
Packaging	***IDENTIFY WITH DART P/N USING FINE POINT PERMANENT INK MARKER***								

EXP 17-5-26

QC APPROVAL

**F.A.I.R. COMPLETION
REQUIRED**

**MATERIAL CERTIFICATION
REQUIRED**

only
6 17-05-30

DAS
9
9-89

6 **DAS**
6 9-89 **MAY 30 2017**

POSITIVE RECALL

EFFECTIVE 17/04/18 AUTH 5
RELEASED 9 DATE 17-05-30
9-89

- * ARC must be created by QA
- * ARC must be contain concession Number.
- * All Parts must be identified w/ concession Number.
- * FAIR must be completed

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		
JAVORP99A 30 QC APPROVAL			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabelled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Work Order ID 159676

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159676

Page 4

Item ID: D4842-3 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: URF 16-692 Stop ***NS2***
Item Name: Lower Cutter Body, LH
Start Date: 4/19/2017 Start Qty: 6.00 ***6*** Cust Item ID:
Required Date: 4/28/2017 Req'd Qty: 6.00 ***6*** Customer:
Reference: SCHEDULED/U

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190	QC21- Final Inspection - Work Order Release	0.00							
190									
QC	Memo	0.00							
Quality Control									

17/6/2017

DAS
21
9-89

MAY 3 1 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : _____			

Picklist Print

Monday, April 17, 2017 1:27:38 PM

Page 1

Work Order ID: 159676

159676

Parent Item: D4842-3

D4842-3

Parent Item Name: Lower Cutter Body, LH

Start Date: 4/19/2017

Required Date: 4/28/2017

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP REV: A NEW ISSUE JFS 13/04/30 VERIFY BY: JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

M7075T6B5.000X1.000

Purchased

No

100

f

13.0290

0.605

3.821053

DAS

M7075T6B5 000X1 000

**

3.454'

20
9-89

17-04-18

7075-T6 BAR 5.000" X 1.000"

Location

MAT005

Loc Qty

13.029

Loc Code

M136904

1.029

M137300

12

1.029'

2.425'

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
☐ Environment	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong		
☐ Design	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions		
☐ Doc/Data	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance		
☐ Equip/Tooling	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect		
☐ Handling/Pre	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing		
☐ Material	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved		
☐ Internal Transport	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing		
☐ Tribal Knowledge	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish		
☐ LOA	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread		
☐ Substation	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence		
☐ Past Expiry Date	☐ Manufacturing Process	☐ OTHER :					
☐ Misidentified	☐ Past Due						

DART AEROSPACE LTD		Work Order: 159676
Description: Lower cutter Body, LH		Part Number: 04842-3
Inspection Dwg: 04842 Rev: B		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.13 X 45°	+/- .030	.130	✓		SL10	Vein
.168	+ .003 / - 0.000	.1695	✓			
3.68	+/- .030	3.678	✓			
.425	+0.000 / - .0078	.420	✓			
5.50	+/- .030	5.500	✓			
.70	+/- .030	.699	✓			
.84	+/- .030	.845	✓			
1.50	+/- .030	1.501	✓			
30.2°	+/- .5°	30.2°	✓		Protractor	
6.8°	+/- .5°	6.8°	✓		"	
23.7°	+/- .5°	23.7°	✓		"	
.90	+/- .030	.902	✓		SL10	Vein
.24	+/- .030	.246	✓			
.20	+/- .030	.200	✓			
6.52	+/- .030	6.524	✓			
4.93	+/- .030	4.930	✓			
1.50	+/- .030	1.514	✓			
1.47	+/- .030	1.470	✓			
4.580	+/- .010	4.580	✓			
4.220	+/- .005	4.220	✓			
2.110	+/- .005	2.110	✓			
.360	+/- .010	.360	✓			
.400	+/- .010	.400	✓			

Measured by: 20 9-89	Audited by: DAS 14 9-89	Preliminary Approval:
Date: 17-04-19	Date: 17/04/20	Date:

Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

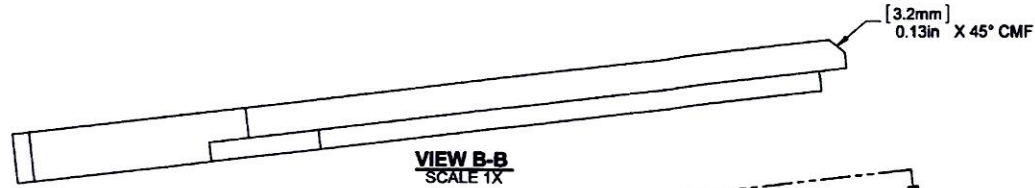
QA Closed: _____ Date: _____

Work Order update only ☐

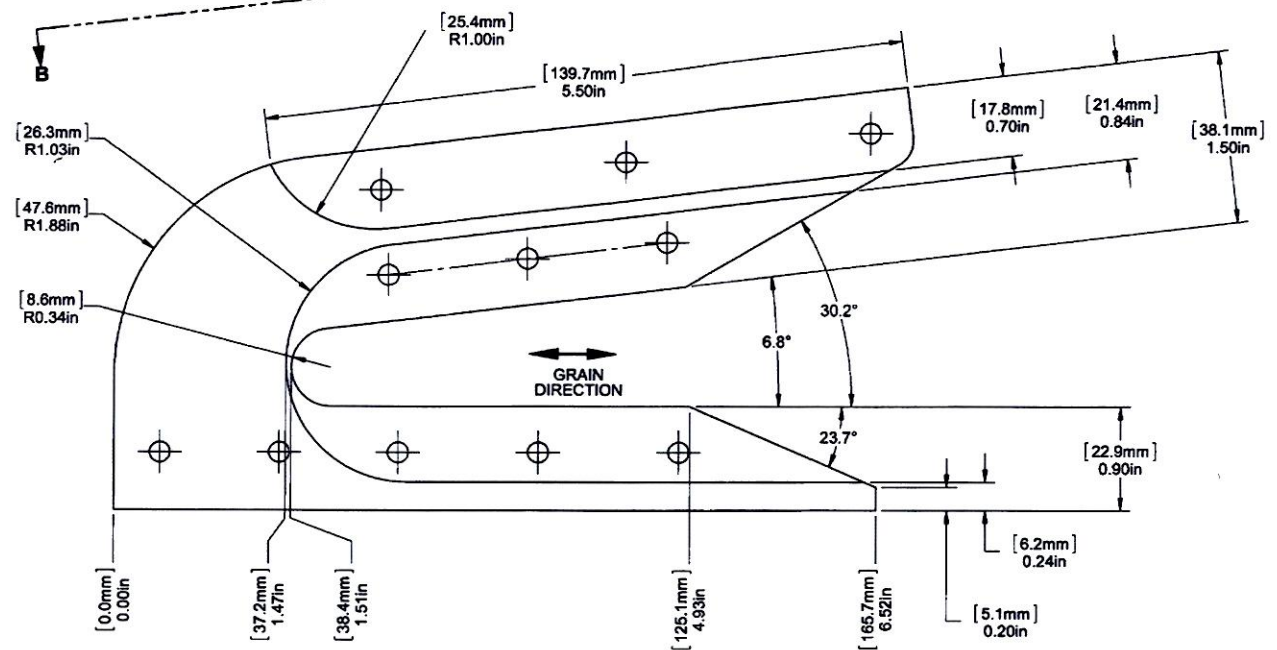
Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
								Completed By	
				Lead hand / Supervisor Approval Verification					
				QC / QA Coordinator Approval					

Root Cause				FAULT CATEGORY			
Environment ☐		No Re-verification ☐		Pressure/Forced ☐		Temperature/Cure ☐	
Design ☐		Operator ☐		Bending ☐		Set-up ☐	
Doc/Data ☐		Offset/Setup ☐		Centre Not Concentric ☐		BOM/Route ☐	
Equip/Tooling ☐		Supplier ☐		Cracks ☐		Broken/Damage/Defect ☐	
Handling/Pre ☐		Training ☐		Crimp/Kink/Ripple/Wave ☐		Inspection Incomplete/Unqualified ☐	
Material ☐		Use for Testing ☐		Cuffs ☐		Contamination ☐	
Internal Transport ☐		Poor Information ☐		Crushing ☐		Countersink ☐	
Tribal Knowledge ☐		Rushing ☐		Heat Treat ☐		Cut Too Short ☐	
LOA ☐		Product Improvement ☐		Wave/Twist in Tube ☐		Instructions Incomplete/Unclear ☐	
Substation ☐		Process Improvement ☐		Marks/Chatter ☐		Drill Holes ☐	
Past Expiry Date ☐		Manufacturing Process ☐		OTHER : _____			
Misidentified ☐		Past Due ☐					

8 7 6 5 4 3 2 1



[4.3mm +0.1
0.0]
[0.168in +0.003
0.000] TYP
B



Per conclusion
10.8mm to 0.000mm
0.200mm
0.425" to 0.000"
0.0075"

D4842-3 LOWER CUTTER BODY LH

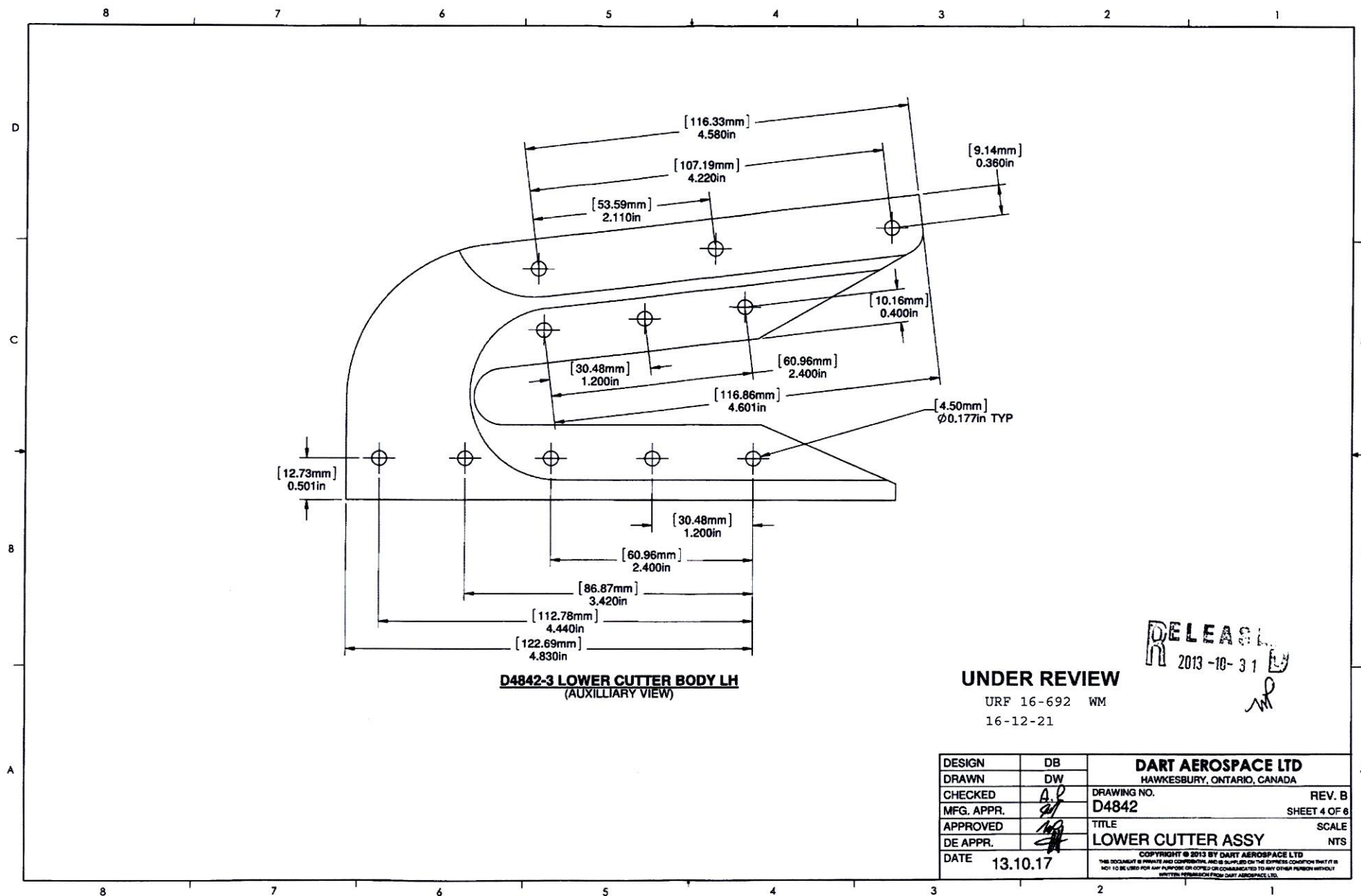
UNDER REVIEW
URF 16-692 WM
16-12-21

RELEASED
2013-10-31

- NOTES:**
- 1) MATERIAL: 7075-T6 (OR T651/T6510/T6511/T62) ALUMINUM BAR
PER AMS-QQ-A-225/9 (OR AMS 4122/4123/4186/4187) OR
PER AMS-QQ-A-200/11 (REF DART SPEC M7075T6B)
 - 2) FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK, AS PER QSI 017;
PRIME IAW MIL-P-23377J TYPE I CLASS N; 1-2 MIL MAX, AS PER QSI 005.
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 0.49 lbs (0.22 kgs)
 - 8) PART DIMENSIONS CONTROLLED BY CAD MODEL FILE: D4842-3-b.IGES

DESIGN	DB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	DW		
CHECKED	A.P.	DRAWING NO.	REV. B
MFG. APPR.		D4842	SHEET 3 OF 6
APPROVED		TITLE	SCALE
DE APPR.		LOWER CUTTER ASSY	NTS
DATE	13.10.17	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

8 7 6 5 4 3 2 1



Wes

		Supplier Concession				PAGE 1 of 2	PLANT Leonardo Helic. - Vergiate	
Supplier NC N.	AWC 006/01		Date	02.02.2017		AW Concession	400000061786	
P/N	6F9540V00231		Grade/Category	NC		Purchase Order	4801373666	
Part Description	PROTECTR, CCP ASSY LOWER		Batch Quantity	20,000		Drawing Issue		
AW NC	GUIDO BRUSCINO		Defective Quantity	20,000		A/C Type/Model	AW6	
Supplier	DART AEROSPACE LTD		Contract					
Defect FO01 - Wrong dimensions - * 02.02.2017 09:40:16 GUIDO BRUSCINO (40067) * see supplier document attached - B/N quantities and PO's listed in the Cause of Defect								
Repetitiveness (same P/N - Defect Code) NO ☒ YES ☐ Follow								
ENGINEERING Evaluation and Proposal								
Engineering Evaluations, including Specialist inputs:			Investigation Report n.			Compliance Report n.		
* 10.02.2017 18:01:48 MARCELLO STEFANELLI (9273) * The part is acceptable with the action proposed by the supplier applied.								
Classification of Deviation from Type Design i.a.w. EASA Part 21A.91 : Minore/B								
Defect effect						Limitations		
	Before Repair		After Repair					
Safety	☐	YES	☐	YES	☐	YES (to specificity) ☒ NO		
Life or Duration	☐	YES	☐	YES	☐			
Strenght	☐	YES	☐	YES	☐			
Performances	☐	YES	☐	YES	☐			
Interchangeability	☐	YES	☐	YES	☐			
Reliability	☐	YES	☐	YES	☐			
Maintainability	☐	YES	☐	YES	☐			
Installability	☒	YES	☐	YES	☒			
Testability	☐	YES	☐	YES	☐			
Only Appearance	☐	YES	☐	YES	☐			
No Effect	☐	YES	☐	YES	☐			
Repair Proposal:						Decision		
* 10.02.2017 18:01:48 MARCELLO STEFANELLI (9273) * See attached supplier document.						☐ Use rep. with spec.repair(not yet applied) ☒ Use repaired with known repair(yet applied) ☐ Use As Is ☐ Use repaired for tests only(see Limitations) ☐ Use As Is for tests only(see Limitations) ☐ Scrap		
Concession Classification		☐ MAJOR ☒ MINOR		Re-submit after Repair		☐ YES ☒ NO		
Mark part with Concession		☒ NO ☐ YES		Method :				
ATE	MARCELLO STEFANELLI		CPE			Date	10.02.2017	
Checks and tests to be performed								
Repair registration		with repair WO		☒ Number:				
Repair Evaluation:								
Final Decision								
S/N	Use As Is (UTI)	Use Repaired (R/L)	Scrap (SCA)	S/N	Use As Is (UTI)	Use Repaired (R/L)	Scrap (SCA)	
	☐	☐	☐		☐	☐	☐	
	☐	☐	☐		☐	☐	☐	
	☐	☐	☐		☐	☐	☐	
	☐	☐	☐		☐	☐	☐	
	☐	☐	☐		☐	☐	☐	
	☐	☐	☐		☐	☐	☐	
	☐	☐	☐		☐	☐	☐	
	☐	☐	☐		☐	☐	☐	
Not Serialized	Use As Is (Q.ty)	Use Repaired (Q.ty)	Scrap (Q.ty)					
Role	AW ATE	AW CPE	Inspection Clearance Repair	Quality	Customer	MoD or Authority Representative		
Signature	MARCELLO STEFANELLI							
Date	10.02.2017							



Supplier Concession

PAGE
2 of 2

PLANT
Leonardo Helic. - Vergiate

Supplier NC N.	AWC 006/01	Date	02.02.2017	AW	400000061786	Purchase Order	4801373666
-----------------------	------------	-------------	------------	-----------	--------------	-----------------------	------------

DEFECT 0001

FO01

Wrong dimensions

attachment

Manuf. Doc. N.	AWC 006	Date		AW Doc. N.		Purchase Order	4800671131 4800722284 4801147764 4801186922 4801218851 4801288960 4801373666
AW P/N	6F9540V00231	S/N / Batch Number	B109195 Qty. (1) B133355 Qty. (2) B134314 Qty. (1) B134315 Qty. (1) B134842 Qty. (1) B137492 Qty. (1) B137355 Qty. (2) B137816 Qty. (1) B137818 Qty. (1) B137817 Qty. (1) B140379 Qty. (3) B140381 Qty. (2) B147002 Qty. (2) B150786 Qty. (1)	Grade	A	AW Drawing Issue	B

Description	Lower Cutter Assy	Batch Q.ty	20	Defective Q.ty	20
Manufacturer	Dart Aerospace	Model	AW169		

Defect(s) Description

Leonardo has informed Dart that there are interference issues installing the lower cable cutter D4842-041 onto the Leonardo interface bracket.

Department	Inspector	Signature	Date
Quality	DAS 16 9-89		2017/02/01

Defect(s) Cause

The Lower Cutter body has a dimension of 10.9 +0.25/-0.00 mm. This dimension was reported as part of the approved FAI and has been met with all delivered product.

Department	Inspector	Signature	Date
Quality	DAS 16 9-89		2017/02/01

Corrective Action

Complete
Before

In order to mitigate the interference issue for Leonardo, Dart is proposing to remove sufficient material to make the overall installation dimension at 22.15 mm +0.05/-0.35.

Department	Inspector	Signature	Date
Quality	DAS 16 9-89		2017/02/01

For "MANUFACTURER" SUPPLIERS ONLY
ENGINEERING evaluation and proposal

Engineering evaluation

Investigation report

n.....

Compliance report

n.....

Dart's position is that this change will not impact the structural substantiation presented in Report DA169-4 for the lower cutter body since this is not a section with the lowest margin. Therefore removing 0.3 mm max from each part will not impact the structural integrity of the lower cutter assembly. The dimension on the cutter body part D4842-3/-4 will be 10.80 +0.00/-0.200.

The dimension change of the two lower cutter body parts mating, plus the sealant, anodize and primer layers will be defined as a dimension of 22.15 +0.05/-0.35 mm on the assembled lower cutterbody and will be incorporated into the D4842 drawing for inspection.

	Defect effects		Limitations
	Before any repair	After any repair	
Safety	☐ yes	☐ yes ☐ no	☐ yes (specify) ☒ no
Life	☐ yes	☐ yes ☐ no	
Strength	☐ yes	☐ yes ☐ no	
Performances	☐ yes	☐ yes ☐ no	
Interchangeability	☐ yes	☐ yes ☐ no	
Reliability	☐ yes	☐ yes ☐ no	
Maintainability	☐ yes	☐ yes ☐ no	
Installability	☒ yes	☐ yes ☒ no	
Testability	☐ yes	☐ yes ☐ no	
Only aspect	☐ yes	☐ yes ☐ no	
Repair Proposal		Decision to use	
None		☐ Use repaired with specific repair ☐ Use repaired with known repair ☐ Use as is ☐ Use repaired for tests (see Limitations) ☐ Use as is for tests (see Limitations) ☒ Scrap	
Concession Classification		Submit after repair	
☒ Major ☐ Minor		☐ yes ☐ no	



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO36166

Purchase Order Date 5/2/2017

PO Print Date 5/24/2017

Page Number 1 of 11

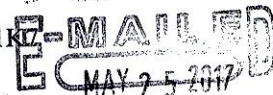
Order From :

VC-ATG001

Ship To : DART AEROSPACE LTD

A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE ROAD
ROCKLAND, ON K4K 1T2
CANADA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA



Contact Name

Vendor Phone 613-446-4544

Ship To Contact

Ship To Phone

Ship Via: VENDOR'S TRUCK

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

CAD

FOB

FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	159671	D4842-1 LOWER CUTTER REV. B	6/16/2017 Yes 6/16/2017		4.00	\$12.05	\$48.20
FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-PRF-23377 TYPE I CLASS N							
Line Total:							\$48.20
2	159676	D4842-3 LOWER CUTTER REV. B	5/29/2017 Yes 5/29/2017		6.00	\$10.25	\$61.50
FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-PRF-23377 TYPE I CLASS N							
Line Total:							\$61.50
3	159677	D4842-4 LOWER CUTTER REV. B	5/29/2017 Yes 5/29/2017		6.00	\$10.25	\$61.50
FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-PRF-23377 TYPE I CLASS N							

PO Instructions: PRIMER IS SUPPLIED BY DART

Note:

5/24/2017

Monday, April 17, 2017 11:22:35 AM

All amounts are calculated in domestic currency.

All Item ID/GL/WOs All Rec. Employees All Currencies

[illegible]

**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 1 of 2

Shipment No:3248910

Ship From: A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 11-APR-17	F.O.B. ORIGIN	Freight Terms Prepaid		Carrier MANITOULIN		BOL No 3248910-2	

Shipment Details				Final Destination Branch - TOR			
Order No 4706819	Line No 3	Item No 752188.MO	Description 1.0000.PL.7075.T651.ALUMINUM.USI.48.5000.144.5000 CUT 2SIDED TO 5 IN (± .1250/- .0000 IN) X 144.5 IN () - ALUMINUM PLATE SAW SPECIFICATIONS: AMS-QQ-A-250/12 Email P/s and certs to: clavoie@dartaero.com				
Purchase Order No 35724		Part Number		Ordered Qty 1.00 PCS		Invoice Qty 1.00 PCS	
Details		ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS					
Delivery No. 120973957	Mill	Heat Number 	Mech Id	PCS 1	Width (IN)	Length (IN)	Shipped Qty(LBS) 75.2348

These items are controlled by the U.S. Government and authorized for export only to the country of ultimate destination for use by the ultimate consignee or end-user(s) herein identified. They may not be resold, transferred, or otherwise disposed of to any other country or to any person other than the authorized ultimate consignee or end-user(s), either in their original form or after being incorporated into other items, without first obtaining approval from the U.S. Government or as otherwise authorized by U.S. law and regulations.

These items are controlled by the U.S. Government and authorized for export only to the country of ultimate destination for use by the ultimate consignee or end-user(s) herein identified. They may not be resold, transferred, or otherwise disposed of, to any other country or to any person other than the authorized ultimate consignee or end-user(s), either in their original form or after being incorporated into other items, without first obtaining approval from the U.S. Government or as otherwise authorized by U.S. law and regulations.

Date Printed: 11-APR-2017 03:25:11 PM

SHIP TO:

A M CASTLE METALS
4775 ROYAL DRIVE, SUITE 600
KENNESAW, GA 30144

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

SOLD TO:

AM CASTLE & CO- SOLD TO
1420 KENSINGTON RD
SUITE 220
OAK BROOK, IL 60523

CERTIFIED TEST REPORT

Serial Number
4419943

CUSTOMER PO NUMBER: 383160		WORK PACKAGE:	CUSTOMER PART NUMBER: 752188		SHIP RUN/LOAD: 103575/1	GOV'T CONTRACT NUMBER:	
KAISER ORDER NO: 1214391	LINE ITEM: 1	SHIP DATE: 26-MAY-2016	ALLOY: 7075	CLAD: BARE	TEMPER: T651	PRODUCT DESCRIPTION: KaiserSelect Plate	
WEIGHT SHIPPED: 3610 LB	QUANTITY: 5 PCS EST.	TRUCK B/L #: 2060482	GAUGE: 1.0000 IN (25.4000 MM)	DIAMETER/WIDTH: 48.500 IN (1231.9 MM)		LENGTH: 144.500 IN (3670.3 MM)	

MHU 2005043: LOT 787564A4: 5 pieces.

Certified Specifications

AMS 4045/RevK
ASTM B 209/Rev14
BSS 7055/Rev8
DPS 4.713/RevAK
PS 21211/RevP

AMS-QQ-A-250/12/RevA
ASTM B 594/Rev13
CMMP 025/RevU
GAMPS 9101/RevB:AmdSCN1

AMS STD-2154/RevA
BAC 5439/RevJ
CSTI 006/RevE
GSS16100/RevG:Amd1

Test Code: 1512

Test Results

Lot: 787564A4 Cast 189 Drop 62 Ingot 3 Parent Lot: 173952B3 Melted in USA

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir. # Tests	Ultimate KS (MPa)	Yield KS (MPa)	Elongation %
	T651	LT / 2 (Min:Max)	82.8 : 83.1 (571 : 573)	73.3 : 73.8 (505 : 509)	13.5 : 13.7

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual(wt%)	0.05	0.11	1.5	0.01	2.6	0.20	5.7	0.02	0.01	0.01	TOT 0.05

JUN 01 2016



MATERIAL RECEIPT INSPECTION FORM

MATERIAL# _____
DATE _____

Q.C. 18 INSPECTION # _____

MATERIAL CERT REC'D _____
QUANTITY RECEIVED _____
QUANTITY INSPECTED _____
QUANTITY REJECTED _____

THICKNESS ORDERED _____
THICKNESS RECEIVED _____
SHEET SIZE ORDERED _____
SHEET SIZE RECEIVED _____

DESCRIPTION	NCR Check Y/N	COMMENTS
SURFACE DAMAGE	Y N	
CORRECT FINISH	Y N	
CORROSION	Y N	
CORRECT GRAIN DIRECTION	Y N	
CORRECT MATERIAL	Y N	
CORRECT THICKNESS	Y N	
PHOTO REQUIRED	X N	
CORRECT MATERIAL	Y N	
CORRECT REF # TO LINK CERT	Y N	
CORRECT MATERIAL IDENTIFICATION	Y N	
CORRECT M# ON THE MATERIAL	Y N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y N	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW:				
	HRC	HRS	DUR A	DUR D
TYPE OF MATERIAL				
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: _____	SIGNED OFF BY: _____
DATE: 12-14-12	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in:



Dart Aerospace Ltd
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1083

PURCHASE ORDER

Purchase Order ID PO35724

Purchase Order Date 3/24/2017

PO Print Date 3/24/2017

Page Number 3 of 4

Order From:
METAUX CASTLE
P.O. BOX 4090 STN A
TORONTO, ONTARIO M5W 0E9
CANADA

VO-MET002

Ship To: DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone

Ship To Contact
Ship To Phone
Ship Via:
Ship Acct:

Yours ppd

Buyer
Customer POID
Customer Tax #
Terms
Currency
FOB

Chantal Lavoie
10127-2607
Net 30
USD
Destination-Collect

5	M7075T6B5 000X1 000	7075-T6 BAR 5.000" X 1.000"	4/13/2017	12.00	✓	\$37.38	\$448.56
---	---------------------	-----------------------------	-----------	-------	---	---------	----------

Yes

4/13/2017

MATERIAL: 7075-T6 OR T651 T6510/T6511/T62 ALUMINUM BAR
AS PER AMS-QQ-A-225/9 OR AMS 4122/4123/4186/4187 OR
PER AMS-QQ-A-200/11 OR QQ-A-250/12 CUT FROM PLATE

Line Total: \$448.56

6	M7075T73B4 000x4 000	7075-T73 Bar 4.0 x 4.0 grain direction along 4" wide	4/13/2017	4.00	✓	\$124.25	\$497.00
---	----------------------	--	-----------	------	---	----------	----------

Yes

4/13/2017

MATERIAL: 7075-T73/T73510/T73511 BAR AS PER AMS-QQ-A-200/11 OR AMS-QQ-A-225/9 OR AMS 4124 OR AMS-QQ-A-250/12 OR AMS 4078

NOTE: GRAIN DIRECTION MUST RUN ALONG 4" WIDE

Line Total: \$497.00

7	M7075T73R1 000	7075-T73 Rd Bar 1.00	4/11/2017	36.00	✓	\$7.80	\$280.80
---	----------------	----------------------	-----------	-------	---	--------	----------

Yes

4/11/2017

MATERIAL: 7075-T73 OR 7075-T7351/T73510/T73511 ROUND BAR
AS PER AMS-QQ-A-200/11 OR AMS-QQ-A-225/9

Note:

3/24/2017

B I L L O F L A D I N G

No: PEC 31809

Ship From:
 THYSSENKRUPP MATERIALS NA
 2821 LANGSTAFF ROAD
 CONCORD, ONTARIO L4K 5C6
 Tel: 905 669 9444 Fax: 905-738-9033

Ship Date 21Feb17 at 10:45 From PFW
 Probill
 Via VIM DELIVERY
 FOB CONCORD
 Frt PREPAID
 Route 0- 0 Manifest
 Vhcle Trailer
 Slp STAN IVERS (905-532-1350)
 Sold To: (20115)
 DART AEROSPACE
 1270 ABERDEEN ST
 HAWKESBURY, ON K6A 1K7

Ship To: (1)
 DART AEROSPACE
 1270 ABERDEEN ST
 HAWKESBURY, ON K6A 1K7
 Tel: 613-632-9577 Fax: 613-632-1053

B I L L O F L A D I N G

1) Our Order PEC- 19505- 1 Your PO # 35352
 ALUMINUM PLATE 7075-T651 DOMESTIC
 1.00" THICK X 5.0000" X 95.6250"

Heat Number	Tag No	Quantity	PCS	Wt LBS
9350450	620420	3.32 SFT	1	52

TOTAL:	Tags	PCS	LBS
	1	1	52

Heat Number *** Chemical Analysis ***
 9350450

MILL TEST REPORTS, PACKING SLIPS ARE TO SENT
 WITH MATERIAL AND FAXED TO THE CUSTOMER PRIOR
 TO SHIPPING.

ATTN: CHANTAL/LINDA

** ALL PACKING SLIPS MUST HAVE THE HEAT NUMBER **
 ** REFERENCED ON IT **

TOTAL 1 BDL GW. 65 LBS

*CUSTOMER PICK-UP HRS AT THYSSENKRUPP MATERIALS NA
 CONCORD, ONT.* *** 9:00 AM TO 4:00 PM ***
 **** TEL. 800-926-2600 ****

 * WE STOCK STAINLESS STEEL *
 * PLEASE LET US QUOTE YOUR NEXT REQUIREMENT *

Page: 1Continued

TOUTES ERREURS ET/OU MARCHANDISES MANQUANTES DOIVENT ÊTRE

RAPPORTÉES IMMÉDIATEMENT
 ERRORS OR SHORTAGE MUST BE REPORTED IMMEDIATELY

RETOUR DE MARCHANDISES AVEC NOTRE NUMERO D'APPROBATION SEULEMENT
 MERCHANDISE MAY NOT BE RETURNED WITHOUT OUR APPROVAL NUMBER

THYSSENKRUPP MATERIALS NA

DART AEROSPACE

ALUMINUM PLATE 7075-T651 DOMESTIC
1.00" THICK X 5.0000" X 95.6250"
PART NO.

PO/Rel 35352

We certify that this is a true copy of the report
furnished by the producer of the metal, or data
resulting from tests made in approved labs.

Certificate of Mill Test Results

BL. PEC-031809-001

21Feb17

Signed by:

Pg 1/2



CERTIFIED TEST REPORT
Constellium Rolled Products
Ravenswood, LLC

SHIP TO
THYSSENKRUPP CA
2821 LANGSTAFF ROAD
CONCORD ON
L4K 5C6
CA

SOLD TO
THYSSENKRUPP CA
2821 LANGSTAFF ROAD
CONCORD ON
L4K 5C6
CA

PECKOVERS		110443237	4075	INCLUSION		Serial: 20160721-0110443237	Pg 1 of 2
CUSTOMER PURCHASE ORDER NO. & ITEM PEC-275877				Constellium ORDER NO. 182317		CERTIFICATION "Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination." Constellium Rolled Products Ravenswood, LLC 859 Century Road P.O. BOX 68 RAVENSWOOD, WV 26164 USA Steve Good - Laboratory Manager	
ALLOY 7075	CLAD	TEMPER T651	GAUGE 1.03000 in 26.16 mm	WIDTH 60.50000 in 1,537 mm	LENGTH 144.50000 in 3,670 mm		
ITEM ORDERED SPEC PLATE, SAWED MILL FINISH							
CUSTOMER SPECIFICATION AMS QQ-A-250/12A							
PART NUMBER		B/L NUMBER 64636		DATE SHIPPED 07/22/2016			
WT. SHIPPED 1960.000 LB		NO. OF PIECES 000002		GOVT. CONTRACT NO.			

ALL LOTS ON THIS CERTIFICATION ALSO CONFORM TO THE FOLLOWING REQUIREMENTS:

AMS 4045K
ASTM B209-14

DAS

14

9-89

17/02/24

Load Details

Package	Net Lbs	Kg	Lot	Piece	Serial	Parent Lot
1001305386	980.000	444.520	9350450	01		
1001305386	980.000	444.520	9350450	03		

Lot: 9350450

Tensile - Room Temperature (US)

Direction	Tests	Ultimate (KSI)		Yield (KSI)		Elongation (%)	
		Min	Max	Min	Max	Min	Max
LT	02	82.2	84.2	72.3	74.4	11.5	12.5

Tensile - Room Temperature (SI)

Direction	Tests	Ultimate (N/MM2)		Yield (N/MM2)		Elongation (%)	
		Min	Max	Min	Max	Min	Max
LT	02	567	581	498	513	11.5	12.5

P-860-155D REVISED: 10 2014

THYSSENKRUPP MATERIALS NA

PART AEROSPACE

ALUMINUM PLATE 7075-T651 DOMESTIC
1.00" THICK X 5.0000" X 95.6250"
PART NO.

PO/Rel 35352

We certify that this is a true copy of the report
furnished by the producer of the metal, or data
resulting from tests made in approved labs.

Certificate of Mill Test Results

BL PRC-031809-001

21Feb17

Signed by:

Pg 2/2



Constellium



CERTIFIED TEST REPORT
Constellium Rolled Products
Ravenswood, LLC

S
H
I
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T
O

THYSSENKRUPP CA
2821 LANGSTAFF ROAD
CONCORD ON
L4K 5C6
CA

S
O
L
D
T
O

THYSSENKRUPP CA
2821 LANGSTAFF ROAD
CONCORD ON
L4K 5C6
CA

PECKOVERS		110443237		4075		INCLUSION		Serial:20160721-0110443237		Pg 2of2																					
CUSTOMER PURCHASE ORDER NO. & ITEM PEC-276877						Constellium ORDER NO. 182317			CERTIFICATION "Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination." Constellium Rolled Products Ravenswood, LLC 859 Century Road P.O. BOX 68 RAVENSWOOD, WV 26164 USA  Steve Good - Laboratory Manager																						
ALLOY 7075	CLAD	TEMPER T651	GAUGE 1.03000 in 26.16 mm	WIDTH 60.50000 in 1,537 mm	LENGTH 144.50000 in 3,670 mm																										
ITEM ORDERED SPEC PLATE, SAWED MILL FINISH																															
CUSTOMER SPECIFICATION AMS QQ-A-250/12A																															
PART NUMBER			B/L NUMBER 64636		DATE SHIPPED 07/22/2016																										
WT. SHIPPED 1960.000 LB		NO. OF PIECES 000002		GOVT. CONTRACT NO.																											
Chemistry (Actual) <table border="1"> <thead> <tr> <th></th> <th>SI</th> <th>FE</th> <th>CU</th> <th>MN</th> <th>MG</th> <th>CR</th> <th>ZN</th> <th>TI</th> <th>ZR</th> </tr> </thead> <tbody> <tr> <td>Core</td> <td>0.06</td> <td>0.17</td> <td>1.45</td> <td>0.05</td> <td>2.47</td> <td>0.20</td> <td>5.68</td> <td>0.02</td> <td>0.01</td> </tr> </tbody> </table>													SI	FE	CU	MN	MG	CR	ZN	TI	ZR	Core	0.06	0.17	1.45	0.05	2.47	0.20	5.68	0.02	0.01
	SI	FE	CU	MN	MG	CR	ZN	TI	ZR																						
Core	0.06	0.17	1.45	0.05	2.47	0.20	5.68	0.02	0.01																						
OTHERS-EACH: .05 MAX. OTHERS TOTAL: .15 MAX. AL REMAINDER																															
All material contained in this lot was cast and manufactured in the USA																															
THIS TEST REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF THE LABORATORY OR AUTHORIZED QUALITY DELEGATE. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. CHEMISTRY BY OES: ARKSPARK CHEMISTRIES REPORTED IN PERCENTAGE BY WEIGHT WHEN FRACTURE TOUGHNESS TEST REQUIRED, TESTED PER ASTM E399 WHEN TENSILE TEST REQUIRED, TESTED PER ASTM E8; B557 DUNS Number: 090570149; CAGE Code: 1YW19 Mercury is not a normal contaminant in aluminum alloys and neither mercury nor any of its compounds were utilized in the manufacture of our product. "END OF CERTIFICATION"																															

P-860-155D REVISED: 10 2014

MATERIAL RECEIPT INSPECTION FORM

MATERIAL M7075T6 B5.000X1.00
 DATE 17/02/24

PO - BATCH NO 35.352/136904

MATERIAL CERT REC'D YES
 QUANTITY RECEIVED 8
 QUANTITY INSPECTED 8
 QUANTITY REJECTED _____

THICKNESS ORDERED 1.00
 THICKNESS RECEIVED 1.110
 SHEET SIZE ORDERED _____
 SHEET SIZE RECEIVED _____

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	Y (N)	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	Y (N)	
CORRECT MATERIAL	Y (N)	7075T6
CORRECT THICKNESS	Y (N)	1.110
PHOTO REQUIRED	Y (N)	
CORRECT MATERIAL	Y (N)	A45-DD-A-25012
CORRECT REF # TO LINK CERT	Y (N)	HEAT# 9350450
CORRECT MATERIAL IDENTIFICATION	Y (N)	M7075T6 B5.000X1.00
CORRECT M# ON THE MATERIAL	Y (N)	M136904
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY	<u>14</u>	SIGNED OFF BY	
DATE	<u>17/02/24</u>	DATE	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO35352**

Purchase Order Date 2/17/2017

PO Print Date 2/17/2017

Page Number 1 of 2

Order From : VC-COP001
THYSSENKRUPP MATERIALS CA LTD
O/A VPK METAL- C/O T27540/PO BOX 4275,POSTAL"A"
TORONTO, ON M5W 5V8
CA

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

FEB 17 2017

Contact Name		Buyer	Chantal Lavoie
Vendor Phone	905 669 9444	Customer POID	
		Customer Tax #	10127-2607
Ship To Contact		Terms	Net 30
Ship To Phone		Currency	CAD
Ship Via:	VENDOR'S TRUCK	FOB	FCA - (Free Carrier)
Ship Acct:			

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	M303B1.000X03.000	303 BAR 1" X 3'	2/28/2017 No 2/28/2017		12.00 f	\$66.75	\$801.00

MATERIAL: AISI 303 SS BAR AS PER ASTM A582
NOTE: AISI 304/316 NOT ACCEPTABLE

Line Total: \$801.00

2	M7075T6B5.000X1.000	7075-T6 BAR 5.000" X 1.000"	2/28/2017 Yes 2/28/2017		8.00 f	\$32.50	\$260.00
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MATERIAL: 7075-T6 OR T651/T6510/T6511/T62 ALUMINUM BAR
AS PER AMS-QQ-A-225/9 OR AMS 4122/4123/4186/4187 OR
PER AMS-QQ-A-200/11 OR QQ-A-250/12 CUT FROM PLATE

Line Total: \$260.00

PO Instructions: PEC ST-19224

Note:

2/17/2017